

The Official Newsletter of the  
Keck Medicine of USC

USC Brain Tumor Center

Patient referrals, (844) 33-BRAIN (844-332-7246)

USC Norris Comprehensive  
Cancer Center  
Keck Medicine of USC

# USC BRAIN TUMOR CENTER

Report

Volume 5 ■ Issue 2

SPRING 2025

## From the USC BTC Directors: WE GO GRAY IN MAY!



**M**ay is **Brain Tumor Awareness Month** and at the USC Brain Tumor Center we proudly **Go Gray in May** - to honor the patients, families, and caregivers impacted by a brain tumor diagnosis.

This newsletter is packed with major milestones, exciting updates, and the many strides the USC Brain Tumor Center is taking as we strive to find a cure for brain cancer.

The USC Brain Tumor Center is always working on advancing research for our brain tumor community. We are so excited to share with you that a USC-licensed startup biomedical company, **NeOnc Technologies**, founded by **Dr. Thomas Chen**, a Keck Medicine of USC neurosurgeon and member of the USC Brain Tumor Center, is taking its groundbreaking invention public. Dr. Chen's innovative brain cancer treatments are not only advancing science but are already being tested in current investigator-initiated clinical trials offered at the USC BTC. This is a major step forward for translational research and personalized care.

This month, we shine a spotlight on **Dr. Eric Chang**, Chairman of the Department of Radiation Oncology. Dr. Chang is considered a world authority on the use of advanced radiation therapy techniques to treat a variety of benign conditions and malignant tumors of the central nervous system.

We are excited to introduce a brand-new section of our newsletter: **A Patient's Corner**. Each issue will now feature insights from our Brain Tumor Center Team focused on patient care, survivorship, and support. Our goal is to provide valuable information and compassionate guidance to those navigating through a brain tumor diagnosis.

May is Brain Tumor Awareness Month, and is a major opportunity for all of us to come together to raise awareness about this devastating group of diseases. Whether it's through sharing our patients' stories, participating in a fundraising event, or simply talking to your friends and family about the importance of brain cancer research, every effort counts.

We are grateful to our donors and to our community partners for bringing attention to the critical need to find and provide effective brain tumor treatment options for those impacted by a brain tumor diagnosis. This May we are extra thankful to the **Ghallerger Family, Willa Chandler, Smith Brothers Restaurants**, and all who are joining us in raising funds for brain tumor research. Your efforts inspire us every day and fuel our mission to improve outcomes for every person impacted by a brain tumor diagnosis.

Together we can make a difference. Let us unite as one community and make unique efforts to increase awareness: whether you are sharing your story, walking for a cause, or helping fund the future of brain tumor care.

Thank you all for your continued support of the USC Brain Tumor Center!

### Heal on!

**Gabriel Zada, MD, MS, FAANS, FACS**  
Co-Director, USC Brain Tumor Center

**David D. Tran, MD, PhD**  
Co-Director, USC Brain Tumor Center

**Josh Neman, PhD**  
Scientific Director, USC Brain Tumor Center



## A Trojan innovation just made it to Wall Street

A USC-licensed startup biomedical company and a Keck Medicine of USC neurosurgeon, focused on treating brain cancer, are taking their invention public. Such collaborations are an important way for researchers to bring promising treatments to patients.

**N**eOnc founder **Dr. Thomas Chen** of Keck Medicine of USC is a tenured professor of neurological surgery and pathology with the Keck School of Medicine of USC and a member of the USC Brain Tumor Center.

Dr. Thomas Chen operates and treats patients with central nervous system malignancies (both brain and spine). He is the Director of the Glioma Research Group, a translational research group focused on novel ways of delivering drugs to brain tumors, and developing new drugs with novel mechanisms of action.

The novel ways of delivering drugs include nasal brain delivery, and disrupting the blood brain barrier directly via direct intra-arterial disruption of the blood brain barrier. The research has resulted in 135 new patents that are filed through USC.

Dr. Chen's goal is to develop USC specific trials that can benefit patients with malignant brain and spine tumors. He has four current trials that have been approved by the FDA for IND testing (2 Phase II, 2 Phase I). The two Phase II trials are using NEO100 for intranasal delivery for patients with Grade III or IV recurrent IDH1 mutant

*Continues on page 2*

**“NeOnc on Wall Street” continued**

gliomas, and for using NEO100 for intranasal delivery for malignant or atypical meningiomas.

The two Phase I trials include NEO212, a temozolomide conjugate, for primary and metastatic brain cancer; and NEO100 for pediatric brain cancers.

Dr. Chen is currently funded by the NIH for a R21, STTR grant; Department of Defense, and CIRM grant for a replication competent retrovirus.

NeOnc’s initial focus is on treating malignant gliomas with a proprietary drug called NEO100, an ultra-purified perillyl alcohol with cancer-fighting properties now in phase 2 clinical trial.

Glioblastoma, the most aggressive malignant glioma, is among the toughest cancers to treat, due to its ability to infiltrate brain tissue.

Complete surgical removal is difficult, and median survival is only 15 months. Malignant gliomas affect up to 15,000 Americans each year.

“Our approach allows us to bypass the blood-brain barrier and target the tumor directly,” said Chen, who estimates he has treated over 1,000 glioblastoma patients since he joined the USC faculty in 1997.

“The molecule we’re delivering is inhaled through the nose, crosses the nasal passage, interacts with the olfactory nerve and then enters the cerebrospinal fluid and circulates throughout the brain. This is different from traditional chemotherapy which is usually given orally and intravenously.”

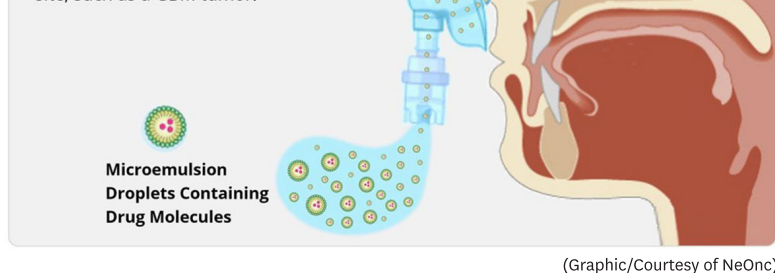
Researchers completed phase 1 clinical trials demonstrating safety and tolerance to NEO100 in 2019. For the phase 2 clinical studies now underway, NeOnc has 10 clinical sites recruiting patients and has recently partnered with a clinical research organization to launch clinical trials across 30 FDA-compliant

### A Nose Mask & Nebulizer Are Used for Intranasal Delivery of Therapeutics

Small molecule therapeutics aerosols are created to pass through the olfactory mucosa to CNS connected nerve tissue.

Once in the nerve pathway, such small molecule therapeutics may be picked up by the brain’s **Cerebrospinal fluid (CSF)**, thereby bypassing the BBB.

The **CSF** surrounds the brain tissue, potentially allowing small-molecule therapeutics to reach a targeted disease site, such as a GBM tumor.



(Graphic/Courtesy of NeOnc)

clinical research sites in India, increasing patient enrollment and accelerating global development efforts.

“What we’re doing is proving the principle that our delivery method can effectively transport agents to the brain,” Chen said. “Once we demonstrate this for brain cancer, the same approach could be used for any brain disease where there’s a potential therapeutic effect.”

NeOnc is the first USC-licensed biotech company with agreements through the **USC Stevens Center for Innovation** to go public.

The promising cancer drug is just one example of the groundbreaking discoveries that research universities bring from the bench to a patient’s bedside through collaborations with biomedical and pharmaceutical companies.

Currently, the USC Brain Tumor Center offers the following three clinical trials with NeOnc Technology:

- An Open-Label, Phase 1/2A Dose Escalation Study of Safety and Efficacy of NEO100 in Recurrent Grade IV Glioma • Perillyl alcohol (inhaled) Phase 1/2A
- Study of NEO212 (Temozolomide-Perillyl Alcohol Conjugate) in Advanced Brain Cancer • NEO212 (oral) Phase 1
- An Open-Label, Phase 2 Study of NEO100 in Participants with Residual, Progressive or Recurrent High-grade Meningioma • Perillyl alcohol (inhaled) Phase 2

A full article on this USC-licensed startup biomedical company can be read at USC News: <https://today.usc.edu/nasdaq-opening-bell-will-ring-for-usc-research-startup/>

## USC Brain Tumor Center Spotlight: Dr. Eric Chang

Dr. Chang is the Medical Director of Radiation Oncology at USC Norris Comprehensive Cancer Center and a member of the USC Brain Tumor Center Team.

**D**r. Eric Chang is an internationally recognized leader in central nervous system (CNS) radiation oncology, known for his pioneering contributions to advanced radiotherapy for both benign and malignant brain conditions. A graduate of MIT and Harvard Medical School, Dr. Chang completed his residency at the Harvard Joint Center for Radiation Therapy and spent over a decade at MD Anderson Cancer Center, where he launched and directed one of the world’s busiest GammaKnife radiosurgery programs and co-developed its first spine tumor stereotactic radiosurgery program.

His landmark phase III randomized trial on brain metastases, published in *The Lancet Oncology*,



has helped change global practice patterns in neuro-oncology.

Dr. Chang has authored or co-authored over 230 peer-reviewed publications and more than 30 book chapters, with his work cited more than 23,000 times to date—underscoring his influence in the field. He is also the lead editor of *Adult CNS Radiation Oncology: Principles and Practice*, now in its second edition (2024).

A Fellow of the American Society for Radiation Oncology (ASTRO), American College of Radiology (ACR), and the American Radium Society (ARS), Dr. Chang has held national leadership roles across American Society for Clinical Oncology (ASCO), ASTRO, and ARS, including his current role as President of the American Radium Society.

As Professor and Chair of the Department of Radiation Oncology at the Keck School of Medicine of

USC, Dr. Chang has led a period of significant clinical and academic expansion. Under his leadership, the CNS division has grown to include a dedicated team of four neuro-radiation oncologists: Dr. Jason Ye, Dr. Adam Garsa, Dr. Aram Modrek, and Dr. Chang himself.

Dr. Modrek also directs a translational research laboratory focused on malignant brain tumors, highlighting the department’s commitment to innovation and scientific discovery.

This growth reflects the department’s strong trajectory and its potential to become a national hub for comprehensive neuro-oncology care and research with the USC Brain Tumor Center.

His ability to lead multidisciplinary teams and shape the field through research, clinical care, and education continues to make a lasting impact in neuro-radiation oncology.



## PATIENTS CORNER- Preparing for an appointment after receiving a brain tumor diagnosis

By Rebekah Ghazaryan, RN, BSN, PHN, NP-S; RN Clinical Coordinator - USC Brain Tumor Center | USC Pituitary Center

**P**reparing for an appointment after receiving a brain tumor diagnosis can feel overwhelming, but with the right approach, you can make the most of the appointment. Here are some steps to help you prepare



Rebekah Ghazaryan,  
RN, PHN, FNP-S

### 1. Write Down Your Questions:

It's normal to have a lot of questions when you're facing a brain tumor diagnosis.

Write them down so you don't forget anything during the appointment.

Some questions you might want to ask include:

- What type of brain tumor do I have?
- What size is it, and where is it located?
- What treatment options are available?
- What are the risks and benefits of each treatment?
- How will this affect my daily life?
- Are there any side effects I should know about?
- What's the prognosis? What are the chances of recovery?

### 2. Bring a Support Person:

When facing such an intense diagnosis of a brain tumor it is important to have people by your side that are your advocates in your healthcare. Bring someone you trust to the appointment, whether it's a family member or a close friend. They can help you remember important details, ask additional questions, and offer emotional support. It can be hard to take in all the information by yourself.

### 3. Write Down Your Symptoms:

Before your appointment, jot down any symptoms you've been experiencing, even if they seem small. This could include things like

headaches, dizziness, vision changes, or memory problems. The more information your doctor and the Brain Tumor Center team has about your symptoms, the better they can advise you on your treatment plan.

### 4. Gather Your Medical History:

If you have any other health conditions or take medications, make sure to bring that information with you. Also, if there are any previous medical tests or scans that are relevant (like MRIs or CT scans), ask our team, Rebekah our BTC RN, or Nancy our BTC RN Navigator, if you should bring them or if they already have access to them. With advanced technology today, healthcare institutes can easily send digital copies of your medical records and push over images via our digital cloud system.

### 5. Consider a Second Opinion:

It's okay to ask for a second opinion. Brain tumor diagnoses can be complex, and getting another doctor's perspective can help you feel more confident about your treatment options. You can ask your doctor to refer you to another specialist if you're unsure about the treatment plan. We encourage second opinions!

### 6. Understand Your Treatment Options:

Ask our team to explain all your treatment options in a way that makes sense to you. There may be surgery, radiation, chemotherapy, or a combination of treatments. Don't be afraid to ask for clarification if anything is unclear. What sets the BTC apart from different institutes is the multidisciplinary appointments we offer our patients with the different specialty physicians involved in your care. It is important to have your entire team together.

### 7. Ask About Lifestyle Changes:

Your doctor may suggest changes to your lifestyle to help with your treatment and recovery, like adjusting your diet, getting more rest, or learning new ways to manage stress. Ask what you can do to improve your overall well-being.

### 8. Plan for the Next Steps:

After the appointment, think about the next steps. Will you need more tests? Should you start any treatments right away?

Make sure you understand what comes next and schedule any follow-up appointments before you leave.

I and the rest of your team will assist in the next steps and will help coordinate any follow-up appointments, tests, further imaging, or anything else to make everything go as smoothly as possible.

### 9. Take Care of Your Emotional Health:

Getting a brain tumor diagnosis can be emotionally challenging. Make sure to check in with yourself and your mental health. Feeling scared, confused, or overwhelmed is normal, but talking to a counselor, therapist, or support group can help you cope.

At the BTC, our amazing social worker, Jin-sy Rogers, and our RN Navigator, Nancy Hart, offer a monthly caregiver support group via Zoom. They are also working on rolling out a support group primarily for patients who are dealing with a brain tumor diagnosis.

### Summary:

Prepare for your appointment by writing down questions, bringing a support person, noting your symptoms, gathering your medical history, considering a second opinion, understanding treatment options, asking about lifestyle changes, and taking notes.

It's also essential to take care of your emotional well-being.

By following these steps, you'll feel more organized, informed, and ready for the next phase of your journey.

As always, I am here to assist you and be a resource for your care.

**Fight On and Heal On!**

## Introducing our Radiation Oncology/USC Brain Tumor Center Intern

**T**he USC Brain Tumor Center, in collaboration with the Keck School of Medicine's **Culture and Engagement Program** and the Department of Radiation Oncology, offers a unique summer research internship opportunity for high school students interested in advancing scientific research.



This program provides students the chance to contribute to cutting-edge studies in fields like cancer biology, oncology and radiation oncology, while gaining invaluable hands-on experience.

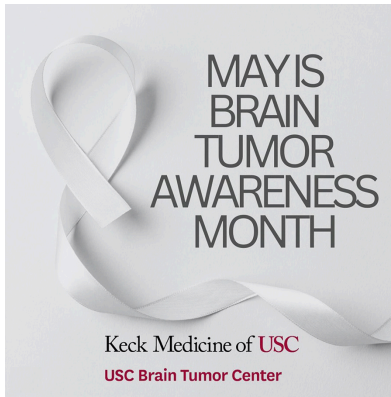
One such student, **Veronica 'Val' Lopez**, a senior at Calabasas High School, is currently participating in the program, working in the **Modrek Lab at USC's Department of Radiation Oncology**. Veronica has long been passionate about biological

sciences and biomedical research, particularly in cancer biology.

Their personal experiences have fueled their determination to pursue a career in oncology research.

Veronica is eager to make significant contributions to cancer treatment and we look forward to seeing them succeed in their career ahead.

## May is Brain Tumor Awareness Month



**B**rain Tumor Awareness Month is nationally recognized in the United States during the month of May. The USC Brain Tumor Center proudly recognizes May as Brain Tumor Awareness Month—a time to honor patients, support caregivers, and spotlight the urgent need for continued funding, research, innovation, and awareness. Throughout the month, we will focus on promoting the importance of this urgent need.

“Increasing awareness and research funding is vital to improve diagnostic techniques, develop more effective treatments and ultimately increase survival rates for those affected by a brain tumor diagnosis”

**Dr. Gabriel Zada**, Surgical Director, USC Brain Tumor Center

The USC Brain Tumor Center raises awareness throughout the year in various ways. We partner with other organizations supporting the brain tumor community nationwide.



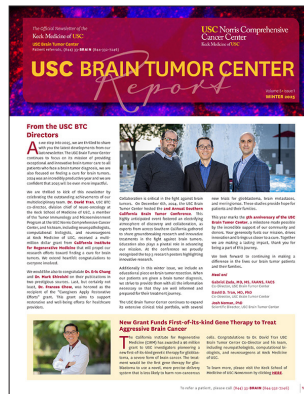
- This year the USC BTC will be sponsoring the **National Brain Tumor Society-Southern California's Tumor Walk/Race**. The race will take place on May 10th at Griffith Park. Join our team as we race to raise funds in support of the brain tumor community. (<http://www.braintumorcommunity.org/goto/USCBTC>).



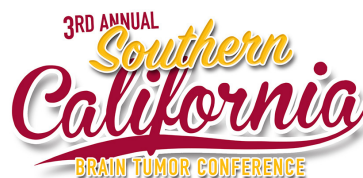
- Our team will be sponsoring the **Tour the Pier** to support the **Uncle Kory Foundation** (<https://www.unclekory.org/tour-de-pier>). Make sure to join this wonderful fundraiser on May 18th, 2025, in Manhattan Beach, California.



- The USC BTC is also sponsoring the **American Brain Tumor Association's National Conference**, which takes place in Chicago in September (<https://www.abta.org/national-conference/>), and their **Los Angeles BT5K**, which takes place in October in Santa Monica, California. (<https://give.abta.org/event/2025-bt5k-los-angeles/e650214>).



- We publish the **USC Brain Tumor Center Report**, a quarterly newsletter for our community, physicians, and partners that summarizes the latest in brain tumor care.



- We host an annual **Southern California Brain Tumor Conference** in collaboration with the top 8 institutions in Southern California.
- We are supported by an **Advisory Council** comprised of dedicated individuals whose primary goal is to advance the Center's established goals.
- We host a **monthly caregiver support group**.
- We partner with businesses in the community that provide support toward our mission of finding a cure while promoting our cause.

The USC Brain Tumor Center is extremely grateful to the **Smith Brothers Restaurants (Parkway Grill, Arroyo Chop House, Smitty's)** for their commitment to supporting the USC Brain Tumor Center during the month of May. Their support during Brain Tumor Awareness month promotes awareness and supports crucial cutting-edge clinical, research, and educational efforts of the USC BTC.

“The partnership with Smith Brothers is extremely meaningful. They are a great example of what it means to give back to important causes in the community. We are tremendously appreciative for their commitment to supporting Brain Cancer Research”

**Paola Mork**, Manager, USC Brain Tumor Center

Visit any of the Smith Brothers Restaurants any Thursday in May so that a portion of your proceeds will enable the USC BTC to accelerate brain cancer research.

### SMITH BROTHERS RESTAURANTS

#### Dinner with Purpose

In support of...

Keck Medicine of USC  
USC Brain Tumor Center

Smith Brothers Restaurant Corporation and Keck Medicine of USC Brain Tumor Center invite you to join us in the fight against brain cancer. Dine with us at all three of the Smith Brothers Restaurants: **Smitty's Grill**, **Parkway Grill**, and **Arroyo Chop House** every Thursday in May, and a percentage of the proceeds will be donated to support the invaluable research being done at Keck Medicine of USC Brain Tumor Center.

Thursday, May 1  
Thursday, May 8  
Thursday, May 15  
Thursday, May 22  
Thursday, May 29



At the USC Brain Tumor Center, our staff understands the worries that brain tumor patients and their families often face. To help make the journey easier, we focus on caring for the whole patient—not just their diagnosis. Our mission is to provide unsurpassed clinical care to patients from all over the world.

During the month of May, the color gray will be seen across our platforms and in our clinic spaces—a symbol of solidarity and hope for the brain tumor community. We invite everyone to get involved by wearing gray, sharing your story, or supporting all who have been affected by a brain tumor diagnosis.

Follow us on social media for updates, events, and ways to participate.

Together, we stand with patients, families, and researchers—this month and every month. Join us in the fight against Brain Cancer!

## May 2025 will be Declared Official Month for Brain Tumor Awareness

Approximately 1 million people in the United States live with one of the more than 100 distinct types of primary brain tumors. Keck Medicine of USC is grateful to the State of California, the City of Los Angeles, and the County of Los Angeles for officially recognizing May of 2025 as Brain Tumor Awareness Month.



Gabriel Zada, MD, MS, FAANS, FACS

oncologists, scientists, social workers, nurses, and all that comprise the Center, and we are 100 percent focused on our mission not only during the month of May but every day.”

**Dr. Gabriel Zada**, Surgical Director, USC Brain Tumor Center

The USC Brain Tumor Center has a mission to increase public awareness of brain tumors through advocacy and support for vital research and education about the impact brain tumors have on the lives of patients and their families, and we firmly believe that doing so is critical to finding a cure.

We are grateful that our government representatives are supporting our mission so that together, we can raise awareness and funds and ultimately find a cure for this devastating disease.

“It’s our task to take on this disease, whether it’s to provide care for patients or support for caregivers or their families. Ultimately, our goal is to cure brain tumors and to continue to perform research. We have an amazing team — of surgeons,

## Patient Family Rallies to Raise Funds for Research for the USC Brain Tumor Center

The USC Brain Tumor Center is grateful to count the Gallagher family as part of our committed community joining us in the fight against brain cancer. The USC BTC team had the honor of treating their mother, Della, during her fight with glioblastoma and was highlighted in our Summer 2023 newsletter.

On May 4th, the youngest of Della’s children, Bree, will be running the BMO Marathon in memory of their mother in their hometown of Vancouver, BC. This year, Bree has committed to raising funds to support the brain tumor research initiatives at the USC Brain Tumor



Nicole Measles

Center and is off to an amazing start with over \$20,000 raised.

If you would like to learn more, you can view her [Go Fund Me](#) fundraising page [here](#).

We are so appreciative of the Gallagher family and we will continue to pursue advancement in glioblastoma research in memory of Della and her inspiring spirit. Crowdfunding efforts are a wonderful way to rally support and raise funds. If you have an interest in selecting the USC Brain Tumor Center as a beneficiary for your crowdfunding efforts, please feel free to contact us for support.

Contact **Nicole Measles**, Director of Development at [Nicole.measles@med.usc.edu](mailto:Nicole.measles@med.usc.edu) or (213) 806-0693.

## SELECTED PUBLICATIONS



### Neurocognition in patients with brain metastases treated with radiosurgery or radiosurgery plus whole-brain irradiation: a randomised controlled trial.

**Chang EL, Wefel JS, Hess KR, Allen PK, Lang FF, Kornguth DG, Arbuckle RB, Swint JM, Shiu AS, Maor MH, Meyers CA.** *Lancet Oncol.* 2009 Nov;10(11):1037-44. doi: 10.1016/S1470-2045(09)70263-3. Epub 2009 Oct 2. PMID: 19801201.

■ It is unclear whether the benefit of adding whole-brain radiation therapy (WBRT) to stereotactic radiosurgery (SRS) for the control of brain-tumours outweighs the potential neurocognitive risks. We proposed that the learning and memory functions of patients who undergo SRS plus WBRT are worse than those of patients who undergo SRS alone. We did a randomised controlled trial to test our prediction.

Patients treated with SRS plus WBRT were at a greater risk of a significant decline in learning and memory function by 4 months compared with the group that received SRS

alone. Initial treatment with a combination of SRS and close clinical monitoring is recommended as the preferred treatment strategy to better preserve learning and memory in patients with newly diagnosed brain metastases



### The QIBA Profile for Dynamic Susceptibility Contrast MRI Quantitative Imaging Biomarkers for Assessing Gliomas.

**Radiology. Shiroishi MS, Erickson BJ, Hu LS, Barboriak DP, Becerra L, Bell LC, Boss MA, Boxerman JL, Cen S, Cimino L, Fan Z, Keenan KE, Kirsch JE, Ameli N, Nazemi S, Quarles CC, Rosen MA, Rodriguez L, Schmainda KM, Zahlmann G, Zhou Y, Obuchowski N, Wu O; RSNA QIBA Dynamic Susceptibility Contrast MRI Biomarker Committee.** *Radiology.* 2024 Dec;313(3):e232555. doi: 10.1148/radiol.232555. PMID: 39656118; PMCID: PMC11694077.

■ The dynamic susceptibility contrast (DSC) MRI measures of relative cerebral blood volume (rCBV) play a central role in monitoring therapeutic response and dis-

ease progression in patients with gliomas. Previous investigations have demonstrated promise of using rCBV in classifying tumor grade, elucidating tumor viability after therapy, and differentiating pseudoprogression and pseudoresponse. However, the quantification and reproducibility of rCBV measurements across patients, devices, and software remain a critical barrier to routine or clinical trial use of longitudinal DSC MRI in patients with gliomas. To address this limitation, the RSNA DSC MRI Biomarker Committee of the Quantitative Imaging Biomarkers Alliance developed a Profile that defines statistics-based claims for the precision of longitudinal measurements. Although rCBV is the clinical marker of interest, the Profile focused on the reproducibility of the measured quantitative imaging biomarker, which is the area under the contrast agent concentration-time curve (AUC) normalized by the mean value of normal-appearing contralateral white matter tissue (tissue-normalized AUC values). This article provides the rationale for these claims and the compliance activities needed to achieve these claims. Potential updates to incorporate new data based on advances in technology and clinical care in the Profile are also discussed.



# SAVE THE DATE

Friday, March 6, 2026

3RD ANNUAL

# Southern California BRAIN TUMOR CONFERENCE



Hosted by Keck Medicine of **USC**

## CLINICAL TRIALS:

### Now Enrolling at the USC Brain Tumor Center

Have you or someone you know recently been diagnosed with a brain tumor? Choosing the right treatment can be challenging. To find out more about our breakthrough treatments, contact our specialized brain tumor team at **(844) 33-BRAIN (844-332-7246)** or email **[frances.chow@med.usc.edu](mailto:frances.chow@med.usc.edu)**.



### GammaTile Center of Excellence

This designation recognizes the institution's exceptional expertise in the GammaTile procedure. GammaTile is an innovative radiation source that is placed during surgery to deliver focused, immediate radiation. It is designed to protect healthy tissue and minimize radiation side effects, including hair loss. GammaTile is available for advanced brain tumors including glioblastoma, meningioma, and metastatic brain tumors.

Trial	Interventions	Phase
<b>Glioblastoma</b>		
1	DB107-RRV, DB107-FC, and Radiation Therapy With or Without Temozolomide (TMZ) for High Grade Glioma	• DB107-RRV + DB107-FC + Standard Therapy Phase 1/2A
2	EF-41/KEYNOTE D58: Phase 3 Study of Optune Concomitant With Temozolomide Plus Pembrolizumab in Newly Diagnosed Glioblastoma	• Optune + Pembrolizumab + Standard Therapy • Optune + Placebo + Standard Therapy Phase 3
3	GammaTile and Stupp in Newly Diagnosed GBM (GESTALT)	• GammaTile + Standard therapy • Standard therapy Phase 4
4	Multi-Center Randomized Controlled Phase 2b Clinical Trial to Evaluate the Safety and Efficacy of TVI-Brain-1 Combined with Conformal Radiotherapy and Temozolomide Compared to Standard Therapy as a Treatment for Newly Diagnosed O6-Methylguanine Methyltransferase Negative (MGMT Unmethylated) Grade 4 Astrocytoma (GBM)	• TVI-Brain-1 + Radiation + Temozolomide • Standard therapy Phase 2b
5	A Phase 1/2 Study of Selinexor and Temozolomide in Recurrent Glioblastoma	• Selinexor + Temozolomide • Temozolomide Phase 1/2
6	An Open-Label, Phase 1/2A Dose Escalation Study of Safety and Efficacy of NEO100 in Recurrent Grade IV Glioma	• Perillyl alcohol (inhaled) Phase 1/2A
7	Study of NE0212 (Temozolomide-Perillyl Alcohol Conjugate) in Advanced Brain Cancer	• NE0212 (oral) Phase 1
<b>Meningioma</b>		
8	An Open-Label, Phase 2 Study of NEO100 in Participants with Residual, Progressive or Recurrent High-grade Meningioma	• Perillyl alcohol (inhaled) Phase 2
9	Observation or Radiation Therapy in Patients with Newly Diagnosed Grade II Meningioma That Has Been Completely Removed by Surgery (NRG-BN003)	• Radiation • Standard therapy Phase 3



# Keck Medicine of USC

BEYOND EXCEPTIONAL MEDICINE™

## USC Brain Tumor Center

1441 Eastlake Avenue  
Los Angeles, CA 90033

Patient referrals, (844) 33-BRAIN (844-332-7246)

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SOUTHERN  
CALIFORNIA

**At the USC Brain Tumor Center, our mission is to provide exceptional, comprehensive and innovative concierge-style treatment plans for adults and children with all types of brain tumors and related conditions. [Giveto.USC.edu](https://www.usc.edu/giveto)**

## We Are the USC Brain Tumor Center

### NEUROSURGERY

Gabriel Zada, MD, MS  
Josh Neman, PhD  
Steven Giannotta, MD  
Frank Attenello, MD, MS  
Thomas Chen, MD, PhD  
Aaron Cohen-Gadol, MD, MSc  
Cheng Yu, PhD  
Oscar Aurelio, PhD  
Camelia Danilov, PhD  
Reza Ghodsi, PhD  
Radu Minea, MD  
Steve Swenson, PhD  
Weijun Wang, MD

### NEUROLOGY

Helena Chui, MD

### NEURO-ONCOLOGY

David D. Tran, MD, PhD  
Frances Chow, MD  
James Hu, MD  
Tania Vartanians, MS, PA-C

### RADIATION ONCOLOGY

Shelly Bian, MD  
Eric Chang, MD, FASTRO  
Adam Garsa, MD  
Lindsay Hwang, MD  
Richard Jennelle, MD  
Aram Modrek, MD, PhD  
Jason Ye, MD

### NEURO-RADIOLOGY

Zhaoyang Fan, PhD  
Paul Kim, MD  
Priya Rajagopalan, MD  
Mark Shiroishi, MD

### NEURO-PATHOLOGY

Kyle Hurth, MD, PhD  
Anna Mathew, MD  
Michael Selsted, MD, PhD

### NORRIS CANCER CENTER

Dennis Deapen, DPH  
Caryn Lerman, PhD

### NEURO-OPHTHALMOLOGY

Kimberly Gokoffski, MD, PhD

### ADVANCED IMAGING (USC Laboratory of Neuro Imaging)

Vishal Patel, MD  
Arthur Toga, PhD  
Paul Thompson, PhD  
Danny Wang, PhD

### BIOINFORMATICS AND TRANSLATIONAL GENOMICS

John Carpten, PhD  
David Craig, PhD  
Bodour Salhia, PhD  
Daniel Weisenberger, PhD

### CLINICAL TRIALS

Trey Garrett  
Sandy Leong, BSN, RN, CCRP

### MOLECULAR BIOLOGY AND TRANSLATIONAL RESEARCH

Peggy Farnham, PhD  
Brooke Naomi Nakamura  
Suhn Rhie, PhD  
Axel Schöenthal, PhD  
Saman Sedighi, MD  
Jean Chen Shih, PhD  
Anna Wu, PhD  
Min Yu, PhD  
Berislav Zlokovic, PhD

### BIostatISTICS AND NEURO-Epidemiology

Steven Yong Cen, PhD  
Robert McKean-Cowdin, PhD  
Kimberly Siegmund, PhD  
Joseph Wiemels, PhD

### CHLA

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